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# RECENT ADVANCES IN PERINATOLOGY

WITH SPECIAL REFERENCE TO ETHNICITY

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Ethnic Asians and Caucasians populations differs that is genetically predetermined, hence Ethnic Asians Perinatal guidelines outlined for the first time in this book is based on research and clinical evidence is mandated for the wellbeing of ethnic Asian foetuses and neonates

**DR.GRACE LALANA PUBLICATIONS**

# **RECENT ADVANCES IN PERINATOLOGY**

**WITH SPECIAL REFERENCE TO ETHNICITY**

**DR. GRACE LALANA CHRISTOPHER**

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Mob: + 91 - 9980365600

Email: [info@newgenparenting.com](mailto:info@newgenparenting.com)  
[drlalana@gmail.com](mailto:drlalana@gmail.com)

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*Dedicated to my Professors*

*Professor Sheila Periera  
who kindled the love of Pediatrics*

*&*

*(Late) Professor Malathi Jadhav  
who helped find my forte-Research*

*to all my Colleagues and Friends*

*and to my Family*

The multidisciplinary field Perinatal Medicine has important aspects comprising of 'fetal medicine,' perinatal care,' 'at risk pregnancy,' 'congenital malformations,' 'fetal assessment' and 'management of the newborn' is an upcoming field, combining the services of Obstetricians, Paediatricians, Neonatologist, and extended perinatal team of Radiologist, Ultrasonographer, Paediatric surgeons, Nursing staff, Geneticists and others. This book titled "Advances in Perinatology with special reference to Ethnicity" is a welcome boon with specific perinatal guidelines in reference to Ethnicity of newborns whether Asian, Caucasian or Eurasian.

## FOREWORD

It gives me great pleasure to write this foreword to the book "Recent Advances in Perinatology - with special reference to ethnicity," authored by Dr. Grace Lalana Christopher, based on some hard core research done by her on ethnic mothers and newborns.

It is commendable that she is promoting the concept of 'Perinatology' and team work through her book. I am glad that, gone are the days when it was "I (obstetrician) am in charge until the cord is cut and you (Paediatrician) take over from that point." We have to have the two principal specialists liaising from the early antenatal days and in some cases at the stage of the mother planning a pregnancy. This is quite logical as conception, fetus and newborn are all progressive stages of a continuous process of differentiation, maturation, growth and development. This coordination will lead to better outcome. We should encourage 'regionalization' of newborn care and in utero transfers. Perinatal centres should be established which will have services of all the constituents of Perinatal practice like Obstetrics, Neonatology, Pediatric surgery, ultrasonography, genetic and metabolic laboratories, fetal medicine, counselling services, 'high risk mother and baby' clinics and developmental assessment centre.

Dr. Lalana has given us new insight into fetal maturation with respect to Asian babies which has significant implication on planning of delivery and management of the newborn. She has dealt with the important aspects of Perinatal Medicine like the 'fetal medicine,' 'perinatal care,' 'at risk pregnancy,' 'congenital malformations,' 'fetal assessment' and 'management of the newborn.'

She has also during the course the course of her clinical practice discovered a unique and effective resuscitation of newborns utilizing continuous positive pressure "Lalana Newborn Resuscitation" as opposed to intermittent positive pressure ventilation recommended by Neonatal Resuscitation Program, defined in Protocol I & II monitored by pulse oximetry with

## Recent Advances in Perinatology with Special Reference to Ethnicity

sustained nasal oxygen inflation for quick onset of rhythmic respiration which will go a long way in effective resuscitation of asphyxiated newborns thereby not only reducing neonatal deaths but neonatal deaths also fresh stillbirths in reducing the prevailing high perinatal mortality rates in many Asian countries, eliminating hypoxic sequelae, so that these children will be normal.

The other highlights of this book is the data on Perinatal epidemiology. Chapters on 'Perinatal trends', 'Classification of newborns', 'Risk score color index' and ethnic specific nomenclature and definitions are very interesting. These topics are seldom discussed in Obstetric or Neonatology textbooks. She has also provided the Asian, Eurasian and Caucasian due dates for delivery chart. I am sure that this book will be very useful to Obstetricians, Pediatricians/Neonatologists/Perinatal Team and all those who are involved in the care of mother and newborn.

Dr Ranjan Kumar Pejaver  
MBBS, DCH, FRCP, FRCPC (UK)  
Professor of Neonatology  
Editor in chief- Perinatology  
President elect – Federation of Asia Oceania Perinatal Societies.



## PREFACE TO THE THIRD EDITION

Bringing Perinatal Medicine into the twenty third century with special reference to ethnicity and successful “Lalana Newborn Resuscitation” is truly a remarkable feat for which I am filled with gratitude on this achievement. The well-being of the Asian fetus and newborn has become imperative in the face of the prevailing high perinatal mortality is to some extent genetically predetermined in Asian countries is assuming importance despite the decline in morbidity and mortality in infancy by communicable diseases with improved immunization coverage and from diarrheal infections by institution of Oral rehydration therapy.

Neonatal mortality now accounts for approximately two-thirds of the infant mortality, which occurs mainly in the first one week of life, especially within the first 24 hours of life. Not jeopardizing the new life by taking into consideration the inherent ethnic or genetic predisposition at play rather than environmental factors in fetal maturation and the timely safe delivery of these foetuses gives best chances for a healthy newborn with normal growth and development.

Birth asphyxia continues to be the leading cause of preventable proportion of perinatal mortality rates in many Asian countries, on the premise the only therapy for hypoxia is oxygen I discovered the technique of sustained nasal oxygen inflation that not only resulted in almost immediate onset of rhythmic respiration but also excellent outcome of the newborns thereby reducing perinatal deaths.

Thus the aims and scope of the multidisciplinary field of Perinatology will be achieved. The importance of research cannot be underestimated as it takes enormous effort and time. But as it is evident, that without research there would be no progress. It is also evident that excellence in clinical research is a prime requisite for excellence in Medical practice. If I have contributed my mite towards the increased awareness of the well-being of a human being based on ethnicity, during the critical perinatal period of one's life, by taking into consideration that ethnic or genetic influences play a definite role in outcome of newborns and thereby redefining perinatal definitions and guidelines for Asian Obstetricians, Pediatricians and Neonatologists and extended Perinatal team in improving neonatal outcome in ethnic Asian population, I would be well satisfied.

New strategies in perinatal care will certainly help stem the colossal Asian fetal loss as reflected in high prevailing stillbirth rates in a study determining perinatal mortality rates, I undertook an in-depth analysis of various aspects among 21,585 consecutive in-births during the five year period 1979 to 1983 in Child Health unit II and Neonatal Services at the Christian Medical College and Hospital (CMCH), Vellore, South India. The analysis of data by SPSS package gave a wealth of information, so dearly lacking from developing countries. Two papers based on this data was published co-authored by Dr. M. Jadhav, Prof and then Head of Department of Child Health Unit II and Neonatal Service, CMCH, authenticating data. Subsequently I undertook further research projects and data analysis during the years 2000, 2004-'05 and 2015-'17 with publication of high impact papers in reputed international journals with acclaimed professionalism in the related field for promoting the Journal quality and international impact. I am also President & Founder CEO of New Gen Parenting, Website:- <https://www.newgenparenting.com> dedicated to newborns, child care, parenting, as well as books on Perinatology and Cardiac malformations including book of Poetry on life-style goals complimented by original oil paintings.

The implementation of new definitions for term and preterm in Asian newborns into clinical practice to accurately identify those at risk brings about an awareness of their increased vulnerability, will go a long way towards reducing morbidity and mortality without resort to costly hi-tech, sophisticated technology in many developing Asian countries with scarce resources and in so doing envision further reduction in not only perinatal mortality rates but also neonatal, infant and under five child mortality rates.

It gives me great joy and satisfaction to have completed this work. I am grateful to Former Medical Superintendent, (Late) Dr. Jacob Abraham and (Late) Dr. Malati Jadhav, Former Head of Department of Child Health Unit II and Neonatal Services and Heads of various Departments of Obstetrics and Gynaecology, Biostatistics, Pathology, Medical Records and Computer Cell at CMCH, Vellore, South India, SDA Medical Centre, Bangalore, Director, VIMS and RC, Bangalore and to CDM of Shifa Hospital, Bangalore.

Dr. Grace Lalana Christopher  
M.B., B.S. (Vellore), D.C.H. (Vellore), (D.N.B.)  
Consultant Pediatrician "GRACE SPECIALIST CLINIC"  
President & Founder CEO "NEW GEN PARENTING"  
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## INTRODUCTION

Ethnicity plays a very important role in Perinatal Medicine as distinct inherent difference in ethnic Asian and Caucasian population reflects on the well-being of the neonate.

Asian babies are born at an average gestation of 38 weeks with lower mean birthweight of around 3000g and are clinically mature at 36 weeks gestation. In contrast the Caucasian newborns are usually born later at around 40 weeks gestation with higher mean birthweight of around 3500-4000g with increase in mother's BMI but are clinically immature at 36 weeks gestation.

This inherent genetic predisposition in growth of Asian foetuses is evident in intrauterine growth pattern compared over three decades that remained the same despite India having gone through vast technological and economic revolution which has influenced all strata of society and that malnutrition and poor socioeconomic status is now no longer attributable, indicating that Asian babies will continue to remain small which is inherently determined.

India is now the most populous country in the world with over 1.4 billion seconded by China with rapidly declining population. Also out of 250 births per minute India's share is 30 with one birth every 2 seconds with 400 million, the world's largest children population of 41% under 18 years. However having 0.62 doctors per 1000 population against the WHO guidelines of 1 per 1000. Thus with a deficit of 60,000 doctors and 2 million nurses, compounded further by 27% neonatal deaths, 40% low birth weight babies below 2500g and 25% preterm <37 weeks gestation births and high incidence of birth asphyxia of 20-40 percent. Thus it becomes imperative that we safeguard lives of Asian babies by clinical implementation of ethnic Asian specific perinatal definitions and guidelines outlined in this book.

For the first time in the world newborn resuscitation that is scientifically proven, physiologically sound and tested clinically, I discovered during my clinical practise based on the simple premise that oxygen is the only therapy for hypoxia by sustained nasal oxygen inflation as opposed to intermittent positive pressure ventilation advocated by Neonatal

Resuscitation Program' which however is ideal in neonates with previously well aerated lungs, unlike in the newly born with foetal fluid filled lungs that proves detrimental among asphyxiated new-borns with high incidence of hypoxic life-long neurological sequelae in these children. Children with neurological deficit are not only a lifelong burden to parents and to the society but also to the child with neurologicChildren with neurological deficit are not only a lifelong burden to parents and to the society but also to the child who is aware of his or her neurologic deficit and limitations.

"Lalana Newborn Resuscitation" clinically implemented during a study in 2016 was published in 2021 in the Journal of Clinical Medical research Volume 2 (3): Pages 1-90, obviates the need for intubation being non-invasive resulting in almost immediate onset of rhythmic respiration negating hypoxia such that these children will be normal.

Thus the importance of research in the progress of medicine cannot be underestimated. This book titled "Advances in Perinatology with special reference to ethnicity" is a boon to mankind describes ethnic specific perinatal guidelines which need be implemented at grass root level, obviates the need to resort to hi-tech intensive care, which is not cost effective in many developing low socioeconomic Asian countries with limited resources wherein 4/5 of the world's population resides and prevailing high perinatal mortality rates with high incidence of birth asphyxia constituting the leading cause of perinatal deaths which is totally preventable, will certainly help stem the colossal Asian fetal loss of fresh stillbirths which has for long been attributed to lack of medical care and non-availability of hi-tech facilities and low socioeconomic status. Thus the care of the neonate as well as the perinate is a sensitive index of perinatal care to not only reducing the perinatal mortality rate but also neonatal and Infant mortality rate, impact the lowering of under five child mortality rates. Thus the betterment of ethnic newborns by clinical implementation of ethnic specific perinatal guidelines with universal Lalana Newborn Resuscitation will result in the wellbeing of the neonate

Dr. Grace Lalana Christopher  
M.B., B., S. (Vellore), D.C.H, (Vellore), (D.N.B.)  
Consultant Paediatrician "GRACE SPECIALIST CLINIC,"  
President & Founder CEO " NEW GEN PARENTING"  
WEBSITE:- <https://newgenparenting.com>  
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